

What is claimed is:

1. A vapor-compression refrigerant cycle comprising:
a compressor for discharging a high-pressure refrigerant;
a radiator for cooling the high-pressure refrigerant
discharged from the compressor;

an evaporator for evaporating a low-pressure refrigerant after
being decompressed;

an ejector including a nozzle for decompressing and expanding
the high-pressure refrigerant flowing from the radiator in
iso-entropy, and a pressure increasing portion in which a pressure
of refrigerant to be sucked into the compressor is increased by
converting expansion energy of the refrigerant to pressure energy
thereof while the refrigerant discharged from the nozzle and the
refrigerant sucked from the evaporator are mixed; and

a gas-liquid separator for separating the refrigerant flowing
from the ejector into liquid-phase refrigerant and gas-phase
refrigerant, the gas-liquid separator including a gas-phase
refrigerant outlet connected to a refrigerant suction side of the
compressor and a liquid-phase refrigerant outlet connected to a
refrigerant inlet side of the evaporator, wherein:

the refrigerant is a mixture refrigerant in which a first
refrigerant and a second refrigerant are mixed;

when the refrigerant is decompressed and expanded in the nozzle,
the first refrigerant has an adiabatic heat drop that is larger
than an adiabatic heat drop of the second refrigerant;

in the evaporator, the second refrigerant has an evaporation
latent heat that is larger than an evaporation latent heat of the

first refrigerant; and

in the gas-liquid separator, a gas-phase amount of the first refrigerant is made larger than a gas-phase amount of the second refrigerant, and a liquid-phase amount of the second refrigerant is made larger than a liquid phase amount of the first refrigerant.

2. The vapor-compression refrigerant cycle according to claim 1, wherein,

at an outlet of the nozzle, the first refrigerant has a gas-liquid density difference that is smaller than a gas-liquid density difference of the second refrigerant.

3. The vapor-compression refrigerant cycle according to claim 1, wherein the first refrigerant is propane, and the second refrigerant is butane.

4. The vapor-compression refrigerant cycle according to claim 1, wherein the first refrigerant is hydrocarbon, and the second refrigerant is freon.

5. The vapor-compression refrigerant cycle according to claim 1, wherein the evaporator is disposed to cool a medium, the vapor-compression refrigerant cycle further comprising

a heat exchanger disposed for performing a heat exchange between the medium cooled in the evaporator and air to be blown into a compartment.

6. The vapor-compression refrigerant cycle according to claim 5, wherein the mixture refrigerant of the first refrigerant and the second refrigerant is a non-azeotropic refrigerant.

7. The vapor-compression refrigerant cycle according to claim 1, wherein first refrigerant and the second refrigerant are mixed in such a manner that the mixture refrigerant is decompressed in the nozzle to have a gas-phase refrigerant and a liquid-phase refrigerant, and flow speeds of the gas-phase refrigerant and the liquid-phase refrigerant discharged from the nozzle are reduced in the pressure increasing portion to an approximate equal degree.

8. A vapor-compression refrigerant cycle comprising:
a compressor for discharging a high-pressure refrigerant;
a radiator for cooling the high-pressure refrigerant discharged from the compressor;

an evaporator for evaporating a low-pressure refrigerant after being decompressed;

an ejector including a nozzle for decompressing and expanding the high-pressure refrigerant flowing from the radiator in iso-entropy, and a pressure increasing portion in which a pressure of refrigerant to be sucked into the compressor is increased by converting expansion energy of the refrigerant to pressure energy thereof while the refrigerant discharged from the nozzle and the refrigerant sucked from the evaporator are mixed; and

a gas-liquid separator for separating the refrigerant flowing from the ejector into liquid-phase refrigerant and gas-phase

refrigerant, the gas-liquid separator including a gas-phase refrigerant outlet connected to a refrigerant suction side of the compressor and a liquid-phase refrigerant outlet connected to a refrigerant inlet side of the evaporator, wherein:

the refrigerant is a mixture refrigerant in which a first refrigerant and a second refrigerant are mixed;

at an outlet of the nozzle, the first refrigerant has a gas-liquid density difference that is smaller than a gas-liquid density difference of the second refrigerant;

in the evaporator, the second refrigerant has an evaporation latent heat that is larger than an evaporation latent heat of the first refrigerant; and

in the gas-liquid separator, a gas-phase amount of the first refrigerant is made larger than a gas-phase amount of the second refrigerant, and a liquid-phase amount of the second refrigerant is made larger than a liquid phase amount of the first refrigerant.